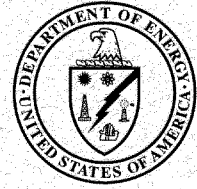


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Idaho Operations Office

FY 2003 Institutional Controls Assessment Report for Waste Area Group 1

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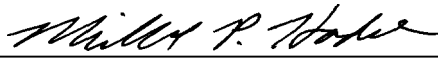
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Idaho Operations Office**

FY 2003 Institutional Controls Assessment Report for Waste Area Group ■

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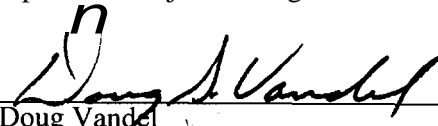
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8-18-03

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Date

ABSTRACT

This report on the FY 2003 Institutional Controls Assessment for Waste Area Group 1 presents the results of the annual assessment of Comprehensive Environmental Response, Compensation, and Liability Act sites at Waste Area Group 1, Test Area North, at the Idaho National Engineering and Environmental Laboratory. The assessment activities required by the *Institutional Control Plan for the Test Area North Waste Area Group 1*, and the *Operations and Maintenance Plan for Test Area North, Operable Unit 1-10* fall into three categories: (1) site-specific maintenance inspections, (2) annual environmental monitoring activities, and (3) institutionally controlled area inspections.

CONTENTS

ABSTRACT	iii
ACRONYMS	vii
1. INTRODUCTION.....	1
2. PURPOSE AND METHODS OF ASSESSMENT	3
2.1 Purpose	3
2.2 Methods of Inspection	3
2.2.1 Site-Specific Maintenance Inspection	3
2.2.2 Environmental Monitoring	3
2.2.3 Institutionally Controlled Area Inspection.....	3
3. RESULTS OF THE FY 2003 ASSESSMENTS	4
3.1 Site-Specific Maintenance	4
3.2 Environmental Monitoring	5
3.3 Institutional Control Sites	5
4. CONCLUSIONS	7
5. REFERENCES	8

FIGURES

1. Locations of TAN facilities	2
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TABLES

1. Inspection of O&M sites at OU 1-10.....	4
2. Summary of FY 2003 environmental survey data.....	5
3. Institutional control sites inspection	6
4. Inspection of institutional controls at wells in TSF-23.....	6

ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFLUP	Comprehensive Facility and Land Use Plan
D&D	decontamination and decommissioning
DOE-ID	U.S. Department of Energy Idaho Operations Office
GPRS	global positioning radiometric scanner
IC	institutional control
IET	Initial Engine Test
INEEL	Idaho National Engineering and Environmental Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
LOFT	Loss-of-Fluid Test
N/A	not applicable
O&M	operations and maintenance
Ou	operable unit
RWP	radiological work permit
SMC	Specific Manufacturing Capability
TAN	Test Area North
TSF	Technical Support Facility
WAG	waste area group
WRRTF	Water Reactor Research Test Facility

FY 2003 Institutional Controls Assessment Report for Waste Area Group 1

1. INTRODUCTION

Test Area North (TAN) is located in the north-central portion of the Idaho National Engineering and Environmental Laboratory (INEEL) Site and is approximately 41 ha (102 acres). TAN comprises four facilities: (1) the TAN Technical Support Facility (TSF), (2) the Initial Engine Test (IET) Facility, (3) the Water Reactor Research Test Facility (WRRTF), and (4) the Specific Manufacturing Capability (SMC) Facility/Loss-of-Fluid Test (LOFT) Facility. TAN has been designated Waste Area Group (WAG) 1. Within WAG 1, Operable Unit (OU) 1-10 performs the activities described in this report. Refer to Figure 1 for a map showing the INEEL Site and the locations of TAN and its four facilities.

TAN was originally built between 1954 and 1961 to support the Aircraft Nuclear Propulsion Program sponsored by the U.S. Air Force and the Atomic Energy Commission. The program objectives were to develop and test designs for nuclear-powered aircraft engines. Upon termination of this research in 1961, the area facilities were converted to support a variety of other Department of Energy research projects. From 1962 through the 1980s, the area supported reactor safety testing at the LOFT Facility. Beginning in 1980, TAN was used to conduct work with material from the 1979 Three-Mile Island reactor accident. This material has been relocated to storage at the Idaho Nuclear Technology and Engineering Center (INTEC).

Current activities at TAN include the manufacture of armor for military vehicles; these manufacturing operations occur at the SMC Facility. Operational activities have ceased at other TAN facilities. Environmental restoration and decontamination and decommissioning activities are ongoing. These activities include:

- The removal of TAN-615, adjacent to TSF-09/18 (the V-tanks), was in progress at the time of the annual inspection, making the north perimeter of the V-tanks site inaccessible for the annual environmental monitoring.
- Pre-remediation soil sampling has been conducted in TSF-06 Area B and TSF-26 to further determine the extent of contamination.
- A new in situ bioremediation facility, with ancillary equipment, is under construction. This activity affects several TAN wells.
- Three wells have been installed, TAN-1859, -1860, and -1861, which will be included in the next IC inspection.
- The well house at TAN-05 has been removed and will be replaced.

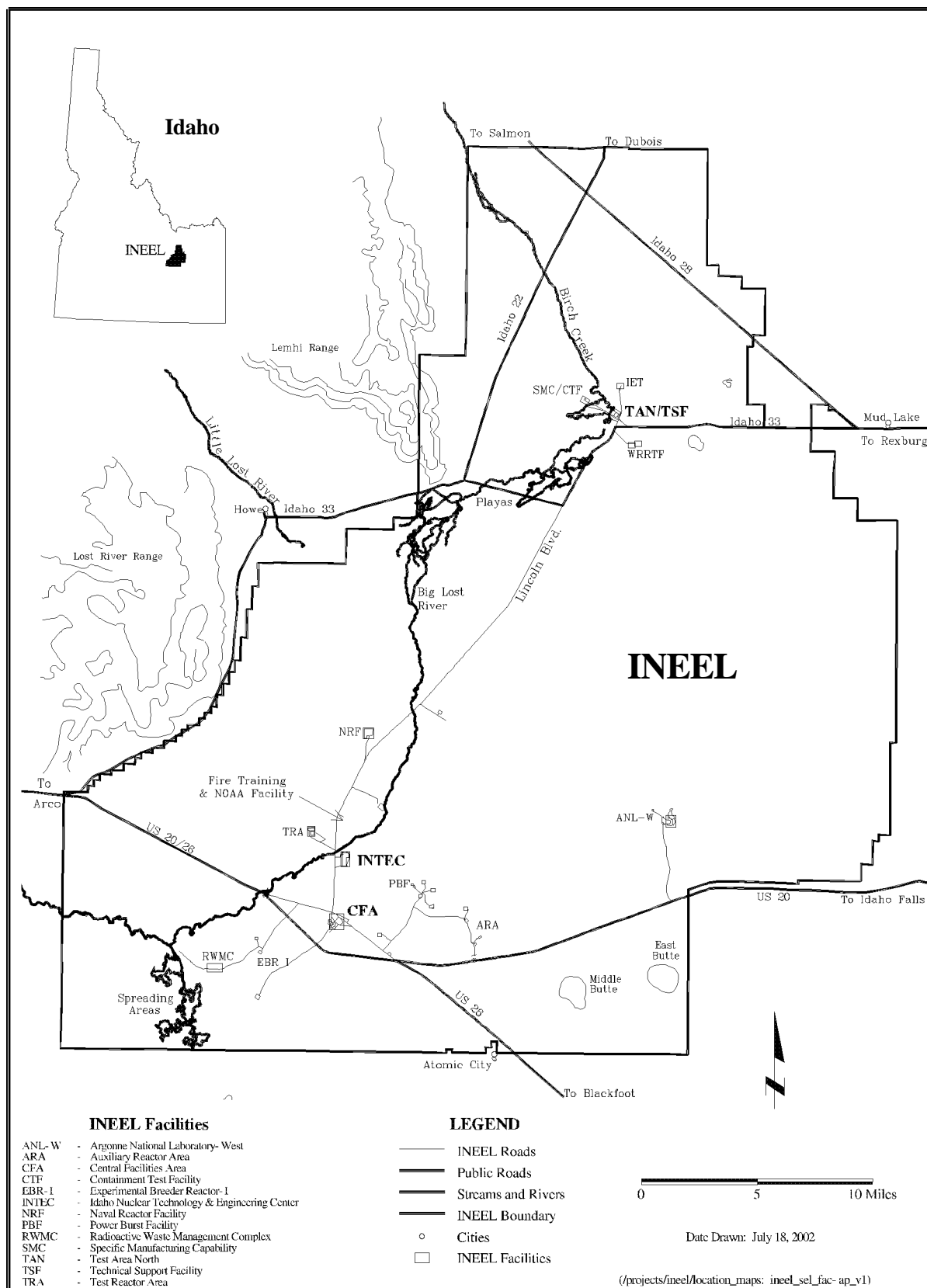


Figure 1. Locations of TAN facilities.

2. PURPOSE AND METHODS OF ASSESSMENT

2.1 Purpose

This report presents the results of the following activities:

- Site-specific maintenance inspections
- Assessment of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) signs and controls
- Environmental monitoring at specific sites to determine whether radioactive contaminants have migrated because of wind or other mechanisms
- Assessment of institutionally controlled areas
- Status of the Comprehensive Facility and Land Use Plan (DOE-ID 1996)
- Maintenance performed as a result of the above inspections.

Twenty sites at TAN have been designated as requiring institutional controls. The controls were instituted in December 2000, and the sites were inspected in 2001, 2002, and in the spring of 2003, in accordance with the *Institutional Control Plan for the Test Area North Waste Area Group 1* (INEEL 2000) and the *Operations and Maintenance Plan for Test Area North, Operable Unit 1-10* (DOE-ID 200 1).

2.2 Methods of Inspection

2.2.1 Site-Specific Maintenance Inspection

The following sites are specified in the OU 1-10 operations and maintenance (O&M) plan (DOE-ID 200 1) as requiring inspection for soil erosion, soil subsidence, and signs of intrusion: TSF-06 Area B, TSF-26, TSF-03, WRRTF-0 1, and TSF-09 and -18 (TSF-09 and -18 are near each other and are, therefore, treated as one site for maintenance inspections). Maintenance activities are performed on an as-needed basis.

2.2.2 Environmental Monitoring

Four sites are specified in the OU 1-10 O&M plan (DOE-ID 200 1) as requiring environmental monitoring for radioactive contamination. The perimeters of sites TSF-06 Area B, TSF-07, TSF-09 and -18 (treated as one site), and TSF-26 are monitored using the global positioning radiometric scanner (GPRS). This vehicle-mounted system is used to characterize the extent of gamma-emitting radionuclide contamination in surface soil. Cesium-137 contamination is the primary gamma-emitting contamination at the sites surveyed. The GPRS system consists of two large-area scintillation radiation detectors mounted on the front of an all-terrain vehicle equipped with global positioning system navigation instruments. In the spring of 2003, the GPRS detectors were replaced with new detectors.

2.2.3 Institutionally Controlled Area Inspection

Twenty institutionally controlled areas require inspection at TAN, in accordance with the *Institutional Control Plan for the Test Area North Waste Area Group 1* (INEEL 2000). They are IET-04, TSF-03, TSF-05, TSF-06 Area 1, TSF-06 Area 5, TSF-06 Area 11, TSF-06 Area B, TSF-07, TSF-08, TSF-09, TSF-10, TSF-18, TSF-23, TSF-26, TSF-28, TSF-29, TSF-39, TSF-42, TSF-43, and WRRTF-01. The areas are inspected for the presence and condition of signs, the general condition of the site, and the

effectiveness of controls, such as radiological work permits (RWPs). The WAG 1 IC sites are recorded in the Comprehensive Facility and Land Use Plan. These records were reviewed as part of the 2003 assessment.

Two sites, TSF-05 and -23, are maintained as part of OU 1-07B. Inspection and maintenance of the institutional controls at these sites are performed with the OU 1-10 institutional control sites. The TSF-05 and -23 sites are associated with the groundwater contamination beneath TAN, and numerous associated wellheads and well houses require inspection (see Section 3.3).

3. RESULTS OF THE FY 2003 ASSESSMENTS

The WAG 1 institutional control and O&M assessments were performed on April 8, 2003. The assessment team included P. A. Sloan, the WAG 1 representative, and two members of the Surveillance, Monitoring, and Long Term Operations group, W. L. Jolley, and D. R. Fitch, who performed the WAG 1 inspections in previous years. Environmental monitoring was performed on June 24, 2003, with C. P. Oertel, K. C. Thompson, and D. R. Fitch. The results of the assessment activities are discussed here.

The CERCLA module of the CFLUP was reviewed and updated during the 2003 assessment, in accordance with *Institutional Control Plan for the Test Area North Waste Area Group 1* (INEEL 2000). The CERCLA module of the CFLUP is now publically available electronically at <http://cflup.inel.gov>.

3.1 Site-Specific Maintenance

The maintenance inspection of TSF-06 Area B, TSF-09 and -18, TSF-26, TSF-03, and WRRTF-01 for soil erosion, soil subsidence, and signs of intrusion was performed on April 8, 2003. No deficiencies were noted and no maintenance tasks were required. Table 1 provides the observations of maintenance sites made in 2003 and compares them to the previous year. No maintenance activities were identified or required as a result of this inspection.

Table 1. Inspection of O&M sites at OU 1-10.

Site	Signs of Intrusion	Subsidence/Erosion	Signs in Place and Readable	Changes from 2002 Inspection
Soil Contamination Area TSF-06 Area B	No intrusion	None	Yes	None
V-Tanks TSF-09 and -18	No intrusion	None	Yes	None
PM2A Tanks Area TSF-26	No intrusion	None	Yes	None
TSF-03 Burn Pit	No intrusion	None	Yes	Subsidence noted in 2002 inspection is repaired.
WRRTF-01 Burn Pits	No intrusion	None	Yes	Subsidence noted in 2002 inspection is repaired.

3.2 Environmental Monitoring

Environmental monitoring was performed on June 24, 2003, by surveying the perimeters of TSF-06 Area B, TSF-07, TSF-09 and -18, and TSF-26 using the GPRS. In 2003, the GPRS was unable to access the north perimeter of TSF-09 and -18 because decontamination and decommissioning (D&D) of Building TAN-615 was in progress adjacent to the fence and the location was not accessible. It was also noted that remedial activities have occurred at TSF-06 Area B and at TSF-26. These areas have been disturbed by recent sampling activities. The FY 2003 survey results showed no significant change from the 2001 and 2002 surveys. No indication of windblown contamination was detected. The maximum activity measured in FY 2003 at all of the locations surveyed was 10,755 counts per second, measured along the perimeter of TSF-09. The maximum activity in 2001, measured at the same location, was 9,583 counts per second. The maximum activity in 2002, measured at the same location, was 8,387 counts per second. This difference is within the expected variation. Results of the survey are available in the Surveillance, Monitoring and Long Term Operations project files. Table 2 summarizes the results of the 2003 survey.

Location	Maximum Value		Minimum Value	
	Counts/sec 2002	Counts/sec 2003	Counts/sec 2002	Counts/sec 2003
TSF-09/18	8,387	10,755	811	1,189
TSF-07	1.115	1.027	434	374
TSF-26	7.691	6.576	734	475 (Combined)
TSF-06. Area B	5.929		504	

3.3 Institutional Control Sites

The inspection of the 20 institutional control sites at WAG 1 was performed on April 8, 2003, and showed no deficiencies. No maintenance or upkeep activities were recommended. The IC records in the CFLUP were reviewed and updated during the 2003 assessment. Changes due to the recent *Explanation of Significant Differences for the Record of Decision for the TAN OU 1-10* (DOE-ID 2003) to the OU 1-10 ROD (DOE-ID 1999) were incorporated. Table 3 lists the sites inspected for institutional controls. A log of the assessment sheets for the 2003 inspection is available in the files of the Surveillance, Monitoring, and Long Term Operations office. The TSF-23 wells and wellheads, including TSF-05, were assessed on April 8, 2003. The condition of the institutional control signs was recorded. The wells or well houses that were inspected are listed in Table 4. No deficiencies were noted in the well inspection.

Table 3. Institutional control sites inspection.

Site	Signs	Work Control	Actions Needed
WRRTF-01	Good condition	N/A ^a	None
TSF-05 Well House	Good condition	N/A	None
TSF-28 Sewage Plant	Good condition	N/A	None
TSF-26 PM-2A Site	Good condition	RWP required; gates locked	None
TSF-10 Disposal Pond	Good condition	N/A	None
TSF-06 Area B	Good condition	RWP required; fence	None
TSF-08 Mercury Site	Good condition	N/A	None
TSF-09	Good condition	RWP required; fence	None
TSF-18	Good condition	RWP required; fence	None
TSF-06 Area 1	Good condition	RWP required; fence	None
TSF-43	Good condition	RWP required; fence	None
TSF-29 Acid Pond	Good condition	RWP required; fence	None
TSF-06 Area 11	Good condition	RWP required; fence	None
TSF-06 Area 5	Good condition	RWP required; fence	None
TSF-42	Good condition	RWP required	None
TSF-39	Good condition	N/A	None
TSF-03	Good condition	Need gate key to access	None
IET-04	Good condition	Need two gate keys to access	None
TSF-07	Good condition	RWP required; fence	None
TSF-23	See Table 4 for visiting of wells at this site	N/A	None

a. N/A = not applicable.

Table 4. Inspection of institutional controls at wells in TSF-23.

Well Number	2003 Inspections	Well Number	2003 Inspections
ANP-8	Sign in good order	TAN-29	Sign in good order
GIN-1	Sign in good order	TAN-30A	Sign in good order
GIN-2	Sign in good order	TAN-31	Sign in good order
GIN-3	Sign in good order	TAN-32	Sign in good order
GIN-4	Sign in good order	TAN-33	Sign in good order
GIN-5	Sign in good order	TAN-34	Sign in good order
TAN-1	Sign in good order	TAN-35	Sign in good order
TAN-2	Sign in good order	TAN-36	Sign in good order
TAN-3	Sign in good order	TAN-37	Sign in good order
TAN-4	Sign in good order	TAN-38	Sign in good order

Table 4. (continued).

Well Number	2003 Inspections	Well Number	2003 Inspections
TAN-5	Sign in good order	TAN-39	Sign in good order
TAN-6	Sign in good order	TAN-40	Sign in good order
TAN-7	Sign in good order	TAN-41	Sign in good order
TAN-8	Sign in good order	TAN-42	Sign in good order
TAN-9	Sign in good order	TAN-43	Sign in good order
TAN-10	Sign in good order	TAN-44	Sign in good order
TAN-10A	Sign in good order	TAN-45	Sign in good order
TAN-11	Sign in good order	TAN-46	Sign in good order
TAN-12	Sign in good order	TAN-47	Sign in good order
TAN-13A	Sign in good order	TAN-48	Sign in good order
TAN-14	Sign in good order	TAN-49	Sign in good order
TAN-15	Sign in good order	TAN-50	Sign in good order
TAN-16	Sign in good order	TAN-51	Sign in good order
TAN-17	Sign in good order	TAN-52	Sign in good order
TAN-18	Sign in good order	TAN-53A	Sign in good order
TAN-19	Sign in good order	TAN-54	Sign in good order
TAN-20	Sign in good order	TAN-55	Sign in good order
TAN-21	Sign in good order	TAN-56	Sign in good order
TAN-MW-2	Sign in good order	TAN-57	Sign in good order
TAN-22A	Sign in good order	TAN-58	Sign in good order
TAN-23A	Sign in good order	TAN-CH1	Sign in good order
TAN-24A	Sign in good order	TAN-CH2	Sign in good order
TAN-25	Sign in good order	TSF-05	Sign in good order
TAN-26	Sign in good order	USGS-24	Sign in good order
TAN-27	Sign in good order	TAN-D1 (Drainage Disposal)	Sign in good order
TAN-28	Sign in good order	TAN-D2 (Drainage Disposal)	Sign in good order

4. CONCLUSIONS

The FY 2003 assessment at WAG 1, including site-specific maintenance inspections, environmental monitoring, and the assessment of institutionally controlled areas, determined that no negative conditions exist that require maintenance or repairs. The institutional controls are operational and protective of human health and the environment. The IC records in the CFLUP were reviewed and updated during 2003 and are now publically available electronically at <http://cflup.inel.gov>.

5. REFERENCES

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